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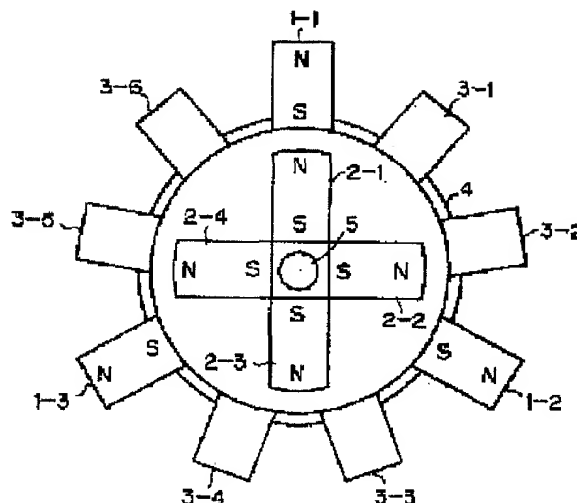
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APPLICANT : SHARP CORP;

INVENTOR : SHIGIHARA YOSHIHITO;

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TITLE : BOTH PERMANENT MAGNET-TYPE
MOTOR



ABSTRACT : **PROBLEM TO BE SOLVED:** To provide a motor such as a stepping motor, in which detent torque is produced and thus power is not consumed, and the stop position accuracy is high, miniaturization is feasible, and the stop position is controllable.

SOLUTION: In this motor, permanent magnets are installed on a fixed-side cylinder 4 and the rotor installed on a rotary shaft 5, and detent torque at the time of non-energization originates by the attractive force among the permanent magnets permanent magnets 1-1 and 2-1 in the figure. The initiation of rotation is accomplished using electromagnets 3-1 to 3-6 placed between the permanent magnets. The electromagnets are excited, so that rotation is generated for a period starting from when the rotor is in a stop state in which the permanent magnets come closest to one another to when the rotor comes to the intermediate point between the stop state and the subsequent stop state, and thereafter driven to the subsequent stop position by the permanent magnets. The number of permanent magnets installed on the cylinder 4 side and the number of permanent magnets installed on the rotor side are set so that the numbers re relatively prime with each other and are two or above. Thereby exercising stop control at an angle smaller than the angle formed by the nine adjoining permanent magnets using both the permanent magnets is possible.

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